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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,683	11/14/2003	Hiroaki Yagishita	WAKA 20.745	2860

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EXAMINER	
AGUIRRECHEA, JAYDI A	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,683	YAGISHITA, HIROAKI	
	Examiner	Art Unit	
	Jaydi A. Aguirrechea	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (US 2003/0020564).

Nishimura discloses a crystal unit (figures 8, 10 and 12) comprising:

- a crystal blank (1) provided with a pair of excitation electrodes (2, 3) an d a pair of extension electrodes (33, 34) extended form the excitation electrodes; and a mounting member on which a pair of connection terminals is formed;
- a mounting member (shown in figure 8) on which a pair of connection terminals is formed (47),
- wherein said crystal blank has a first principal surface and a second principal surface, an inclined surface is formed at one end of said first principal surface, said principal surface and said second principal surface are flat-shaped and parallel to each other, and said extension electrodes are extended toward an end at which said inclined surface is formed, (figure 10 shows the extension electrode extending toward the end of the inclined surface)

- wherein a conductive material is disposed between said connection terminals and said extension electrodes (13) in such a way that said second principal surface face, said mounting member and said crystal blank is held by said mounting member at the position of the end to which said extension electrodes are extended and electrically connected to said connection terminals (see figures 8 and 10); and
- wherein one of the excitation electrodes (2) is arranged on the first principal surface and the other of the excitation electrodes (3) is arranged on the second principal surface opposite to the one of the excitation electrodes arranged on the first principal surface.

However, Nishimura fails to disclose the excitation electrodes (2 and 3) being parallel to each other.

The Examiner takes Official Notice that it is well known in the art of piezoelectrics to use parallel electrodes located on opposite surfaces of a piezoelectric element to induce an electric field between the electrodes and/or create a vibration in the piezoelectric device in the transverse direction parallel to the electrodes, as required or desired by the invention.

Therefore, it would have been obvious at the time of the invention was made to form the electrodes on the flat surfaces parallel to each other in order to produce the desired vibration in the piezoelectric device.

With regards to claim 2, Nishimura discloses the conductive material 13 being a conductive adhesive (see paragraph 54).

With regards to claim 3, in figure 11 Nishimura shows the extension electrodes extending toward both sides of one end of the crystal blank.

With regards to claim 4, figure 10 shows both ends of the piezoelectric crystal being tapered.

With regards to claim 6, Nishimura discloses the crystal blank having substantially rectangular shape as a two-dimensional shape and two inclined surfaces formed at the end of the crystal blank.

With regards to claim 7, in figure 11, Nishimura discloses only one of the ends being inclined.

With regards to claim 8, Nishimura discloses the casing having a recess and the connections being formed on the bottom face of the recess (see figure 8).

With regards to claim 9, Nishimura discloses a hermetically sealed housing (see paragraph 69).

With regards to claim 10, Nishimura discloses the use of a quartz crystal. However, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

With regards to claims 11 and 12, Nishimura discloses substantially rectangular inclined surfaces.

With regards to claim 13, note that when the electrodes are formed on a parallel relation on opposing faces of the piezoelectric crystal, the spacing between them will be uniform, therefore, as explained above, the invention is obvious over Nishimura.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura in view of Wakabayashi (US 5,585,687).

Nishimura discloses the claimed invention as explained above, but fails to disclose the inclined surfaces being different from each other in size and the extension electrodes being extended toward the greater inclined surface.

Wakabayashi discloses, in Column 8 lines 41-45, a crystal unit wherein said inclined surfaces are different from each other in size at the respective ends and in Column 9 lines 49-54, Wakabayashi teaches a crystal unit where said extension electrodes are extended toward the greater inclined surface. Wakabayashi discloses the piezoelectric blank having a trapezoidal shape. The applicant is advised that is has been held by the courts that differences in dimensions do not amount to patentability where such differences do not affect the operation of the prior art device. *In Gardner v. TEC Systems*, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). Therefore, changing the dimensions of the inclined surfaces does not distinguish from that of the prior art.

Response to Arguments

4. Applicant's arguments with respect to claims 1- 13 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments filed 10/3/05 regarding the rejection of claim 5 have been fully considered but they are not persuasive. Wakabayashi does disclose, as an obvious modification of his invention, changing the shape of the piezoelectric crystal. Specifically, Wakabayashi discloses a trapezoidal shape. According to the dictionary, a trapezoid is a quadrilateral having

only two sides parallel, and it is not limited to dimensions of the sides, therefore, the invention is considered to be obvious over Nishimura in view of Wakabayashi.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAA
2/5/06

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